

Puccinellia distans (Jacq.) Parl.
(POACEAE): A HALOPHYTIC GRASS RAPIDLY
SPREADING IN OHIO

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Puccinellia distans (Jacq.) Parl. (alkali grass; reflexed saltmeadow grass) is an Eurasian perennial grass of exposed halophytic situations which has been established locally in the United States since at least the late nineteenth century. It is widespread in the western states and along the northeastern Atlantic Coast with scattered interior stations from southern Ontario to Wisconsin and Illinois (Fernald, 1950; Gleason & Cronquist, 1963; Hitchcock & Chase, 1951; Mohlenbrock, 1975). Although first collected in Ohio in 1963, only in the past ten years has *Puccinellia distans* become common. It has spread rapidly across the state, apparently because of its ability to survive and flourish in salt-rich environments. A review of its advance and occurrence in Ohio may serve as a model for other midwestern states.

Most manuals give the species authorities for *Puccinellia distans* as (L.) Parl., but (Jacq.) Parl. would seem to be correct (E. G. Voss, pers. comm., 1982). Reference works using (Jacq.) Parl. include Dore & MacNeill (1980), Kartesz & Kartesz (1980), and Voss (1972). The Ohio plants can be determined as the var. *tenuis* (Uechtritz) Fern. & Weath. (Fernald & Weatherby, 1916).

Puccinellia distans first was collected in Ohio in 1963 from a rest area along Interstate 75 in Butler County (*Weishaupt s.n.*, OS 74517). This collection is the sole record for the state cited by Weishaupt (1967). Only one other collection is known to exist from Ohio in the 1960's, a specimen sent to The Ohio State University Agronomy Department for identification in 1968. The grass had been collected in Seneca County "in a seeding of Kentucky Bluegrass" (OS 86162).

The mid 1970's saw a dramatic increase in the number and extent of populations of *Puccinellia distans* in Ohio. At this time Weishaupt noted the establishment and spread of this species along Interstate 70 in central Ohio west of Columbus (pers comm., 1981). As of 1981, alkali grass had been collected from 35 Ohio counties, almost all of the collections being from the corridors of interstate highways (Fig. 1).

When in flower *Puccinellia distans* is quite conspicuous, forming a pinkish band paralleling the roadway virtually adjacent to the pavement. Species frequently associated with *Puccinellia distans* include *Anagallis arvensis* L.,

Carex praegracilis W. Boott, *Spergularia marina* (L.) Griseb., and *S. media* (L.) C. Presl ex Grieseb. *Hordeum jubatum* L. is common in the same situations, but grows slightly further from the pavement. This zonation can be very striking, the outer band of *Hordeum* bordering an inner band of *Puccinellia* along the verge. The associated species mentioned above are in both zones with the exception of *Carex praegracilis*. This species occurs only in the *Puccinellia* zone.

Among states and provinces adjacent to Ohio, *Puccinellia distans* has been reported only from Michigan, Pennsylvania, and Ontario. Voss (1972)

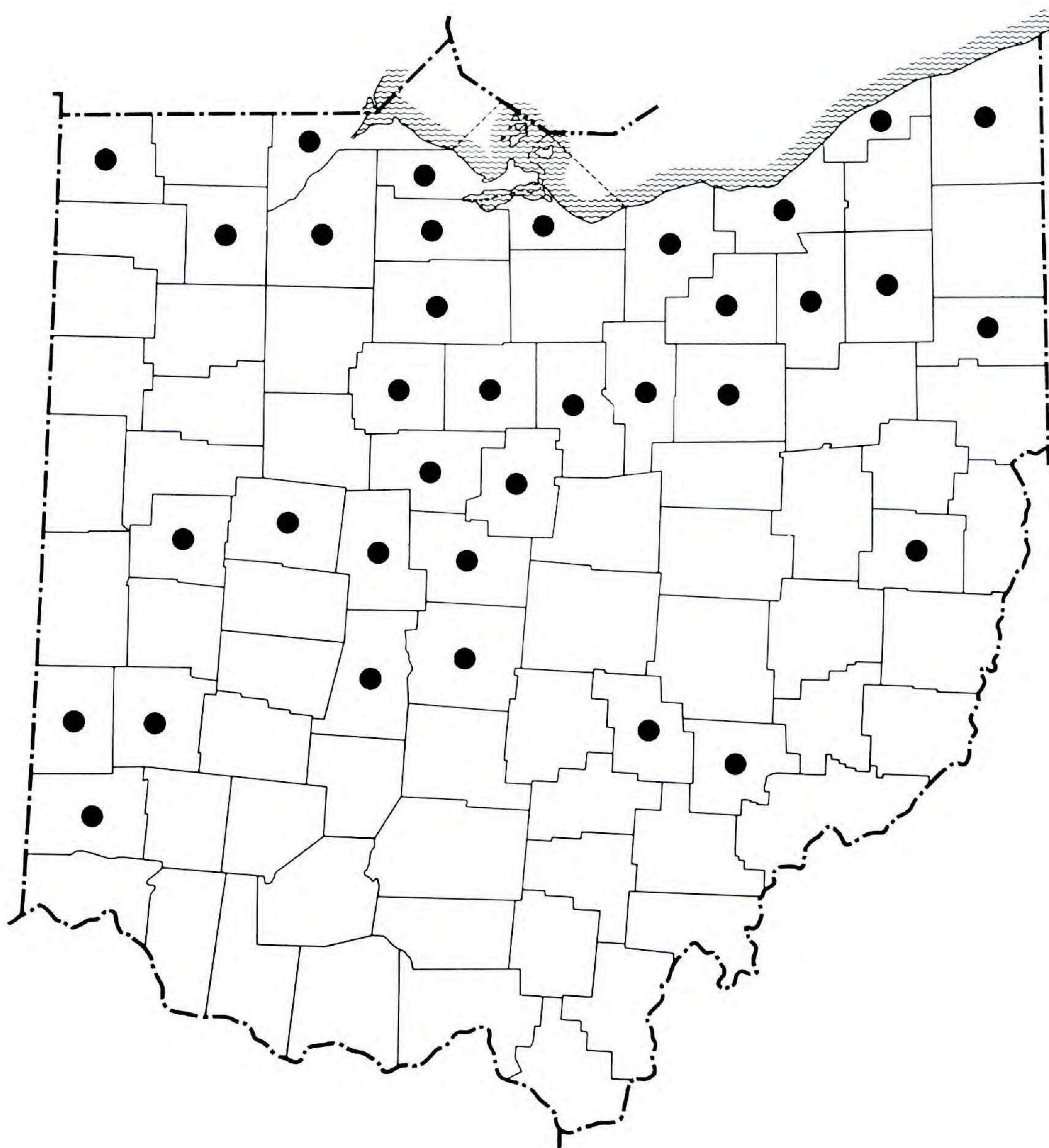


Fig. 1. *Puccinellia distans* (Jacq.) Parl., Ohio county distribution, 1981.

lists this species from six counties of southwestern Michigan, although not from counties bordering Ohio. In Michigan, an association of halophytic species, including *Puccinellia distans*, is described by Reznicek (1980). This site is along an interstate highway and rather similar to, though floristically more diverse than, many of the plant's habitats in Ohio. Alkali grass has been reported only from southeastern Pennsylvania (Wherry, et al., 1979). The species has been known in Ontario since 1879 and now is scattered widely across southern Ontario (Dore & MacNeil, 1980). Though not reported from Indiana (Deam, 1940) or western Pennsylvania, *Puccinellia distans* may be expected to occur in these areas. The species doubtless is present there and may be merely overlooked.

Speculating on the mode of introduction of *Puccinellia distans* in this region, Dore & MacNeill (1980) indicate that it may be a contaminant in the grass mixtures used to seed highways. The 1968 collection cited above was from a seeding of bluegrass, but it would not seem to be a likely source of the many populations in Ohio.

Of equal interest is the rapid advance of the species in recent years across Ohio. This spread must be related directly to the use of road de-icing salt. The verge environment is not saline at first, of course, but gradually the salt accumulates in the soil creating a desert-like situation which few species can tolerate. *Puccinellia distans* seems to be at a great competitive advantage in this salt-rich zone. The advance of alkali grass in Ohio must not be unique to the state, but probably is typical of those states where de-icing salt has been applied repeatedly through time. Given its ability to flourish in such a hostile environment and the widespread occurrence of that environment, *Puccinellia distans* is likely to become a significant member of the spontaneous vascular flora of the Mideast.

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